WORKING PAPER
ALFRED P. SLOAN SCHOOL OF MANAGEMENT

SELF-DIRECTED BEHAVIOR CHANGE[1]

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Two recent developments, one theoretical and one practical, have led behavior change researchers to pay more attention to self-directed techniques of behavior change. In practice, there is a growing demand for behavioral science solutions to human problems. More and more individuals are seeing that the various forms of psychotherapy can provide viable solutions to their personal problems. In addition, social welfare agencies are seeking to change their role from that of policeman and distributer of government funds to that of an agent for individual and community development. This growing demand for the practical application of behavioral science knowledge has made practitioners painfully aware of the fact that, using the existing techniques of behavior change which are so dependent on the change agent for their success, there can never be enough professionally trained personnel to meet this demand. So in desperation the practitioner is asking, "How crucial am I in the change process? Is it possible to develop change techiques that people can use themselves?"

Until recently the theoretical answer has been no. Therapeutic models of change, both the analytic and learning theory based, have conceived of the patient as passive and reactive. In the tradition of their medical origins it is the doctor who was the active and curative agent in the therapeutic process. In an analysis of psychological journals, Allport (1960) found that psychologists exclusively used a reactive model of a man to interpret their results. In the psychologist's mind man was an animal who reacted to stimuli and who was controlled by his environment. The concept of will -- man's ability to control and change

his own behavior -- was nowhere to be found in respectable psychological theories. The idea of self-directed change appeared only in common sense psychologies like those of Norman Vincent Peale and Dale Carnegie.

Currently, however, there are a great number of theorists who challenge the reactive conception of man. Hartmann, Kris and Loewenstein (1947) and other ego psychologists began to reinterpret psychoanalytic theory laying increasing emphasis on the power of ego processes in the rational direction and control of one's behavior. More recently White (1957) has detailed the research evidence for pro-active, competence motivation in human beings -- motives urging men and animals to ignore safety and security, and to take on new, difficult, and challenging tasks. Of this group of men it is perhaps Carl Rogers who has been most influential in applying the new growth-oriented theory of man to the practice of behavior change. He created an entirely new theory and method of psychotherapy -- client-centered therapy (1951). As the name implies, in client-centered therapy the client is the active and curative agent in the therapeutic relationship. The therapist's job is to create in a non-directive way the therapeutic conditions which will facilitate self-inquiry and personal growth in the client. By emphasizing man's creative and problem solving abilities and his growth potential the pro-active theorists imply that self-directed change is not only theoretically possible but that it occurs as a natural life process.

These two conflicting models of man pose something of a dilemma, for we cannot accept one and discard the other without doing an injustice to the data. Research evidence and common sense observations can be

marshalled to support both theories -- man is passive and controlled by his environment as well as creative and self-directing. The noted ethologist Konrad Lorenz (1963) suggests, however, that this dilemma is an illusion. There is no contradiction,he maintains, between the fact that man's behavior is governed by causal stimulus-response type laws and the fact that man strives toward goals and can modify his behavior by an act of will. "The appreciation of the fact that life processes are directed at aims or goals, and the realization of the other fact that they are, at the same time, determined by causality, not only do not preclude each other but they only make sense in combination. If man did not strive toward goals, his questions as to causes would have no sense; if he has no insight into cause and effect, he is powerless to guide effects toward determined goals, however rightly he may have understood the meaning of these goals... (p. 231). Increasing knowledge of the natural causes of his own behavior can certainly increase a man's faculties and enable him to put his free will into action...(p. 232.)"

Thus in his integration of the two models of man Lorenz suggests a methodology for self-directed change. If we can increase an individual's understanding of the psychological laws which govern his behavior, we can increase his capacity for self-direction.

SELF-DIRECTED BEHAVIOR THERAPY

Lorenz's suggestion is currently being explored by Israel Goldiamond, a learning theory therapist (1965). Goldiamond's approach is to help patients develop self-control procedures to solve their problems. He

defines these procedures below:

> The procedures to be discussed center around the proposition that behavior is not an emergent property of an organism nor a property solely of its environment but is described by a functional relation between the two. More technically, given a specified behavior B and a specified environmental variable x, a lawful relation can be found such that B = f(x), under certain empirical constraining conditions c. This implies that when the constraints c are set up, and x is set at a stipulated value, then B will have a stipulated value, given by the value of B = f(x). When the experimenter sets x at that value, he will get the B stipulated. This defines the experimental control of behavior which has been demonstrated repeatedly in operant and other laboratories. When the subject himself sets the x at that value, he will get his own B, as stipulated. This defines self-control...Within this context, the Greek maxim 'Know thyself', translates into, 'Know thy behaviors, know thy environment, and know the functional relation between the two'... Self-control derived from such research can take at least two forms. One is to instruct the subject to set up the procedures which change his environment and which thereby bring his behavior under different control...Another form is to train him in the functional analysis of behavior, and have him try to determine for himself the procedures which he should apply. (p.852)

The following case illustrates in detail Goldiamond's approach to the self-directed change process.

> The husband in this case was a young man, 29, who was working on his master's degree. His wife was taking my course in behavioral analysis, and they both decided that he should come to see me about their marriage, which both wanted to maintain. The issue, as S told me, was that his wife had committed the "ultimate betrayal" two years ago with S's best friend. Even worse, it was S who had suggested that the friend keep his wife company while he was in the library at night. Since that time, whenever he saw his wife, S screamed at her for hours on end, or else was ashamed of himself for having done so and spent hours sulking and brooding. Since the events that led to the "betrayal" were an occasion for bringing home the first lesson on the consequences of behavior, we started from there.
>
> Relation of Behavior to its Consequences
>
> Early discussions concerned the analysis of behavior in terms of its consequences. S's behavior provided stimuli for his wife's behavior. If he wished his wife to behave differently to him, then he should provide other stimuli than the ones which produced the behaviors he did not like. There was considerable analysis of such

interactions. This conceptualization of behavior was apparently new to S, who took detailed notes; and I have discovered it to be new to many other Ss as well.

Stimulus Change

Altering the consequences of operant behavior will alter the behavior itself. However, this process may take a considerable amount of time. One of the most rapid ways to change behavior is by altering the conditions under which it usually occurs. This is called stimulus change, or the effects of novel stimuli. If the novel stimuli are then combined with new behavioral contingencies designed to produce different behavior, these contingencies are apt to generate the new behavior much more rapidly than they would in the presence of the old stimuli.

As part of the program of establishing new stimuli, S was instructed to rearrange the use of rooms and furniture in his house to make it appear considerably different. His wife went one step further and took the occasion to buy herself a new outfit.

Establishment of New Behavior

Since it was impossible for S to converse in a civilized manner with his wife, we discussed a program of going to one evening spot on Monday, another on Tuesday, and another on Wednesday.

"Oh," he said, "you want us to be together. We'll go bowling on Thursday."

"On the contrary," I said, "I am interested in your subjecting yourself to an environment where civilized chit-chat is maintained. Such is not the case at a bowling alley."

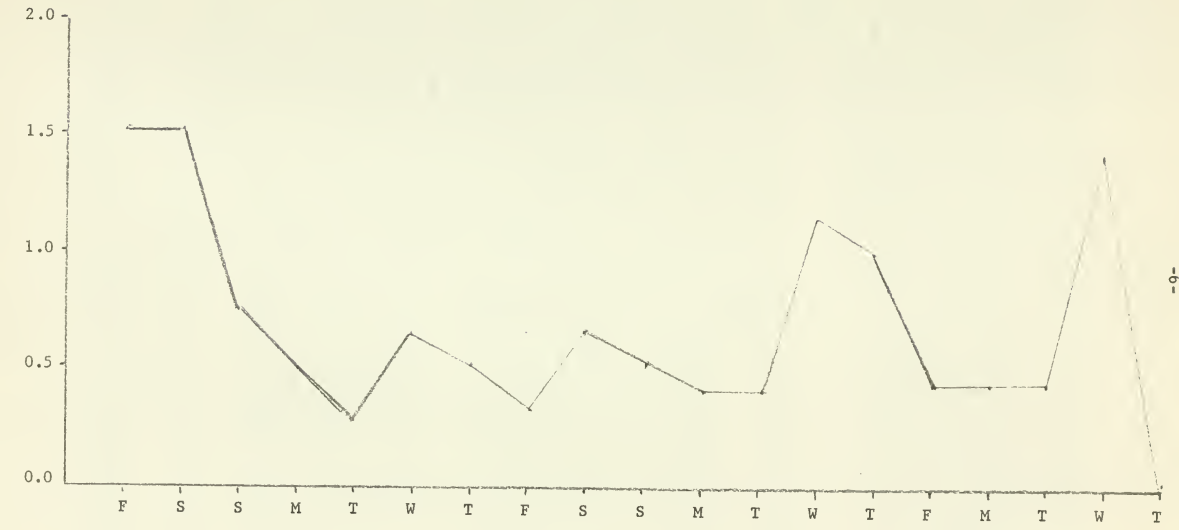
I also asked if there were any topic of conversation which once started would maintain itself. He commented on his mother-in-law's crazy ideas about farming. He was then given an index card and instructed to write "farm" on it and to attach a $20 bill to that card. The $20 was to be used to pay the waitress on Thursday, at which point he was to start the "farm" discussion which hopefully would continue into the taxi and home.

Stimulus Control

Since in the absence of yelling at his wife S sulked, and since the program was designed to reduce yelling, S's sulking was in danger of increasing. S was instructed to sulk to his heart's content, but to do so in a specified place. Whenever he felt like sulking, he was to go into the garage, sit on a special sulking stool, and sulk and mutter over the indignities of life for as long as he wished. When he was through with his sulking, he could leave the garage and join his wife. He was instructed to keep a daily record of such behavior and bring it to each session. The graph is presented in Figure 1. Sulking time had been reported as 7 hours on the preceding day, and, with occasional lapses, it

Figure 1

Graph kept of sulking behavior.



was reported as dropping to less than 30 minutes before disappearing entirely. The reported reversals and drops were occasions for discussions.

Since the bedroom had been the scene of both bickering and occasional lapses, the problem was presented of changing its stimulus value when conjugality was involved. If this could be done consistently, eventually the special stimuli might come to control such behavior. The problem was to find a stimulus which could alter the room entirely and would be easy to apply and withdraw. Finally a yellow night light was put in, was turned on when both felt amorous, and was kept off otherwise. This light markedly altered the perceptual configuration of the room.

Records

Daily notes of events were kept in a notebook, as was the graph. S took notes of the discussions with E. These notes were discussed at each weekly session.

One of the notions which S held very strongly was that his wife's behavior stemmed from some inaccessible source within her, and that many of his own behaviors likewise poured out from himself. In this context, the final sharp rise in the sulking curve was discussed. "The whole procedure won't work," he said, "my wife doesn't need me as much as I need her." The psychiatric message was that he had no control over his wife, but I chose to ignore this message in favor of a didactic one on the behavioral definition of needs. He was asked how he knew what his wife's needs were. Was he an amoeba slithering into her tissues and observing tissue needs? Was he a mind reader? After my repeated rejection of subjective definitions of needs, he redefined the problem behaviorally, namely that his wife behaved a certain way less than he did. He said that stated this way it sounded silly, but I said, "No, it's a problem to you and not silly."

What were these behaviors? They apparently included such dependency behaviors as asking him to do things for her. "When was the last time she asked you to do something for her?" I asked. He replied that the previous day she asked him to replace a light bulb in the kitchen. Had he done so I asked. No, he said. He then was asked to consider the extinction of pigeon behavior and took notes to the effect that, if he wished his wife to act helpless, he should reinforce dependency by doing what she asked.

A discussion on needs and personality ensued. "If by personality all that is meant is my behavior," he said, "then my personality changes from one moment to the next, because my behavior changes," he stated.

"I should hope so," I said.

"Well, what is my true personality; what is the true me?" he asked.

"Do you have a true behavior?" I asked.

He reported this as a viewpoint he had never considered; his previous training had been in terms of being consistent to his self, and of searching for "thine own self(to which he could) be

true." He took extensive notes.

The next week he came in and stated: "I did something last week that I have never done before in my life. When I teach in classrooms I am able to manage my students, but when I talk to tradespeople I find I am very timid and allow myself to be cheated. Well, last week my carburetor gave out. I knew if I went to the garage they would make me buy a new one even though I have a one-year's guarantee. I sent my wife down to the garage instead. She is a real scrapper. She came back with a new carburetor. It didn't cost us a cent. Why should I have to be all things to all men? In school I control things, but with tradespeople I don't. So what?"

These weekly sessions continued during ten weeks of the summer term. After the initial training, S was assigned homework with his wife who was taking the course in behavioral analysis. The weekly discussions were centered around behavioral analysis and how it might apply to his problems.

During the course of one of the sessions, S started to talk about his childhood and was summarily cut off.

"Shouldn't I talk about this with a psychologist?" he asked. "Isn't this one of the things that interests you? Doesn't it affect me now?"

"Look," I said,"A bridge with a load limit of three tons opens in 1903. The next day, a farmer drives eighteen tons over it; it cracks. The bridge collapses in 1963. What caused the collapse?"

"The farmer in 1903," he said.

"Wrong," I said, "the bridge collapses in 1963 because of the cracks that day. Had they been filled in the preceding day, it would not have collapsed. Let's discuss the cracks in your marriage."

At the end of the period, there was no sulking in the garage and the partners were able to commune.

The above case illustrates several important aspects of Goldiamond's technique for self-directed change. Firstly, he emphasizes that the change agent is a consultant to the subject not a therapist -- the subject should have the primary control over his attempts at behavior change. Goldiamond found that most of his subjects were surprisingly capable of this responsibility. He reports,

> "An interesting aspect of these...(cases) was the fact that in a very short time the Ss ran off by themselves to apply the procedures they had learned. In some cases I would have preferred more extensive interchange, and wondered how clinical psychologists were able to keep Ss coming week after week. Finally I attributed the tenure of the relationship to what might be called the Schehreazade effect. Scheherazade, as you will recall, become the consort of a

> king who killed each bedmate after one night, having generalized the infidelity of a previous wife to all women. Scheherazade told him a story on the first night, which was not completed by dawn. The king paroled her for the second night to hear the rest of the story, and having been reinforced, she repeated her behavior. The schedule maintained such behavior for 1001 nights and the result is known as the Arabian Nights.
>
> Few more things are more interesting and will sustain behavior better than support for talking about oneself; one is never finished in 50 minutes. Hence, such discussions may maintain therapy sessions and allow the therapist to interact with the patient over an extended period of time" (p. 118).

A second aspect of Goldiamond's procedure is that the subject is taught how to apply simple learning theory principles like stimulus control to his own behavior. In effect he becomes the experimenter in an attempt to control his own behavior using the scientific principles of learning theory. Thirdly, the subject is encourages as a part of this process to become a careful observer of his own behavior. To aid in this observation the subject keeps charts and diaries which record his behavior over time and give him feedback about his progress toward his change goal.

A final important point about this process is that subjects in many cases are capable of successfully resolving what are very difficult and complex problems (e.g., marital problems) by proceeding from their own diagnosis of symptoms. While many classic forms of psychotherapy still feel that a frontal assault on symptoms is ineffective, the evidence here suggests that at least in some cases the subject can,by beginning with his problem as he sees it, move toward a redefinition and resolution of that problem that brings him relief.

SELF-DIRECTED GROUPS

Another method for self-directed change has been developed at the Western Behavioral Sciences Institute using an instrumented form of

sensitivity training groups (Berzon and Solomon 1965, Berzon and Solomon 1966, Berzon, Reisal and Davis 1967). In these groups the trained professional leader is replaced by a tape-recorded program that guides the group members through exercises of self-exploration and self-improvement. This program, called PEER (Planned Experiences for Effective Relating), has emerged from seven years of research on the technology of self-directed groups.[1] Throughout this time the authors' goal has been to create therapeutic techniques which require less professional supervision and hence will be more available to populations who have been unable to afford them.

PEER's general purpose is to help people learn to relate more fully and effectively to the world around them. To accomplish this, the program provides a series of structured opportunities for each participant to

1) express more easily his genuine feelings and receive the genuine feelings of others, and

2) inquire more actively into his own experience,

3) try new behaviors in the group

thereby, enabling the individual to increase his awareness of the choices available to him, understand better how he functions in groups, and gain more control over what happens between him and other people.[2]

To make the best use of the resources participants bring with them, PEER emphasizes:

1) personal strengths, rather than weaknesses, and potentialities rather than deficiencies:

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[1] The program now renamed Encounter Tapes for Personal Growth Groups is available commerically from the Human Development Institute, Atlanta Gerogia.

[2] The PEER goals are based on those defined by Warren G. Bennis in "Goals and Meta-Goals of Laboratory Training," NTL Human Relations Training News, Vol. 6, No. 3, 1962.

2) learning through experience, the immediate, shared experience of the group, to which all members make meaningful contributions:

3) self-direction, in that the group can conduct its own sessions using the PEER guidelines, thereby making it unnecessary to have a professional leader.

The Program consists of ten one and a half hour sessions each of which begins with tape-recorded instructions. The tape continues to run throughout the session to allow intervention with additional instructions during certain exercises. The ten sessions are briefly described below:

Session 1 - First Encounter Microlab

This session utilizes the concept of the compressed-time microlab, in which there are a series of short, timed meetings and a variety of activities designed to bring the participants into confrontation with one another. Activities include:

Impressions-in which group members stand in a circle and, one at a time, each individual goes around the circle, stopping in front of each person. The instruction is to touch the person to make contact; look directly at him; and tell him your impression of him.

Break-In - in which group members stand in a circle and one at a time each individual steps outside the circle and has to break-in in some way -- to become part of the in-group. The other group members are instructed to keep the person from breaking-in.

Rolling - in which the group members stand in a circle and one at a time each individual goes to the center of the circle, relaxes as completely as he can and allows himself to be passed around by the other group members -- literally putting himself in their hands.

At the beginning of each of these activities, the narrator, on the tape, relates the activity to a personal growth issue, such as honesty, affiliation, trust, etc.

After each of these activities, a timed discussion period is provided in which participants are encouraged to discuss their feelings about what they just did.

Session 2 - Ground Rule

A ground rule is presented emphasizing the importance of expressing feelings, and of learning from the immediate, shared, "here and now" experience of the group. The rule is : a)to tune in to what is happening inside yourself and in the group, and b) to talk up about it. Examples of tuned-in and tuned-out groups are presented on the tape.

Group members pair off to practice this kind of tuned-in interaction, then later reassemble as a total group to discuss what has happened.

Session 3 - Feedback

Information is presented regarding the importance of giving and receiving feedback in the group. Definitions of facilitative and non-facilitative feedback are given, and examples are given on the tape. Group members then practice giving and receiving facilitative feedback in a go around exercise.

Session 4 - Progress Report

Concepts presented in the three previous sessions are reviewed on the tape, and group members are asked to report to themselves on how they are doing relative to the ground rule, giving and using feedback, etc.

Session 5 - Secret Pooling

Group members are asked to write a personal secret anonymously. The papers are scrambled, and each person then reads the secret pulled from the pool. The instruction is to read the secret aloud and tell how you think it would feel to have a secret like that. To insure anonymity, paper and pencils of uniform nature are provided.

Session 6 - Break-Out

Group members stand in a circle and one at a time each individual goes into the center of the circle. He is asked to deal with the circle of people as a problem that stands between him and his freedom. The instruction to the person in the center is to break-out of the circle. The instruction to the other group members is to do everything they can to keep the person in the circle. Following the exercise, group members discuss what has happened and how they felt about it.

Session 7 - Descriptions

Participants are asked to go around, one at a time, and describe the other group members metaphorically --- as an animal, a piece of furniture, a car, etc, They are asked to tell everything they can about what they are describing, including how they feel about it. Examples of this kind of metaphorical description are given on the tape.

Session 8 - Strength Bombardment

Each group members takes a turn in which he spends: a) three minutes telling of his strengths and b) five minutes listening to the other group members tell him what they see about him that is good and strong.

Session 9 - Giving and Receiving

Participants are asked to select three people who have had the most trouble letting the other group members get close to them. These three people then go, one at atime, to the center of the circle. The other group members go, one at a time, to the person in the center and

non-verbally express the positive feelings they have toward him. The person in the center is instructed to receive this expression without returning it -- to have an undiluted experience of receiving, without giving back.

After the three people, and anyone else who wishes to, have taken their turn, the group members discuss what has happened and how they feel about it.

Session 10 - Last Encounter Microlab

This session again involves a series of timed meetings, with varied activities. As in Session 1, the group members do Impressions and Rolling, each of which is followed by a discussion of what happened and how people felt about it. Opportunity is provided for participants to focus on how group members have changed in the PEER group. It is then suggested that they use the rest of the session to take care of unfinished business and to say good-bye to each other.

Evaluation of Self-directed Groups. Early in their research on self-directed groups, the authors and other professionals were quite concerned that groups without professional leaders might produce psychiatric casualities of one sort or another. As a result, early groups were carefully observed in one-way observation rooms (Berzon and Solomon 1966). These observations and interviews with participants in the groups revealed that none of the self-directed group members were injured by the experience and several seemed to feel that they had learned from it. Rather than being more dangerous than professionally led sensitivity training groups, the process of the self-directed groups seemed somewhat more tame.

To test more systematically the differences between professionally led and self-directed groups, an experiment was designed to assess the effects of the two types of groups. Members of six professionally led 8-man groups and six self-directed 8-man groups were compared on such variables as changes in MMPI scores, level of facilitative behavior, and level of intra-personal exploration. No differences were found between the two types of groups. Thus the authors concluded that, "The presence or absence of professional leadership did not significantly effect the groups' ability

to establish facilitative conditions, nor the ability of most of its members to engage in the therapeutic work in a meaningful way." (Berzon and Solomon 1966, p. 492). In a more recent study participants in the PEER program have been compared to no treatment controls (Berzon, Reisel and Davis 1967). The study was conducted with two different populations, law offenders in a county honor camp, and college students. Results of this experiment indicate that PEER participants in both groups showed significant positive change in their self-concept while control subjects showed no change in self-concept during the same time period.

Taken together these studies suggest the PEER is an effective, safe, and inexpensive technique for facilitating personal growth. In addition, the self-directed instrumented group may well be a new technology that is applicable to other programs of therapy, training, and education such as management training, civil rights negotiations, and group therapy.

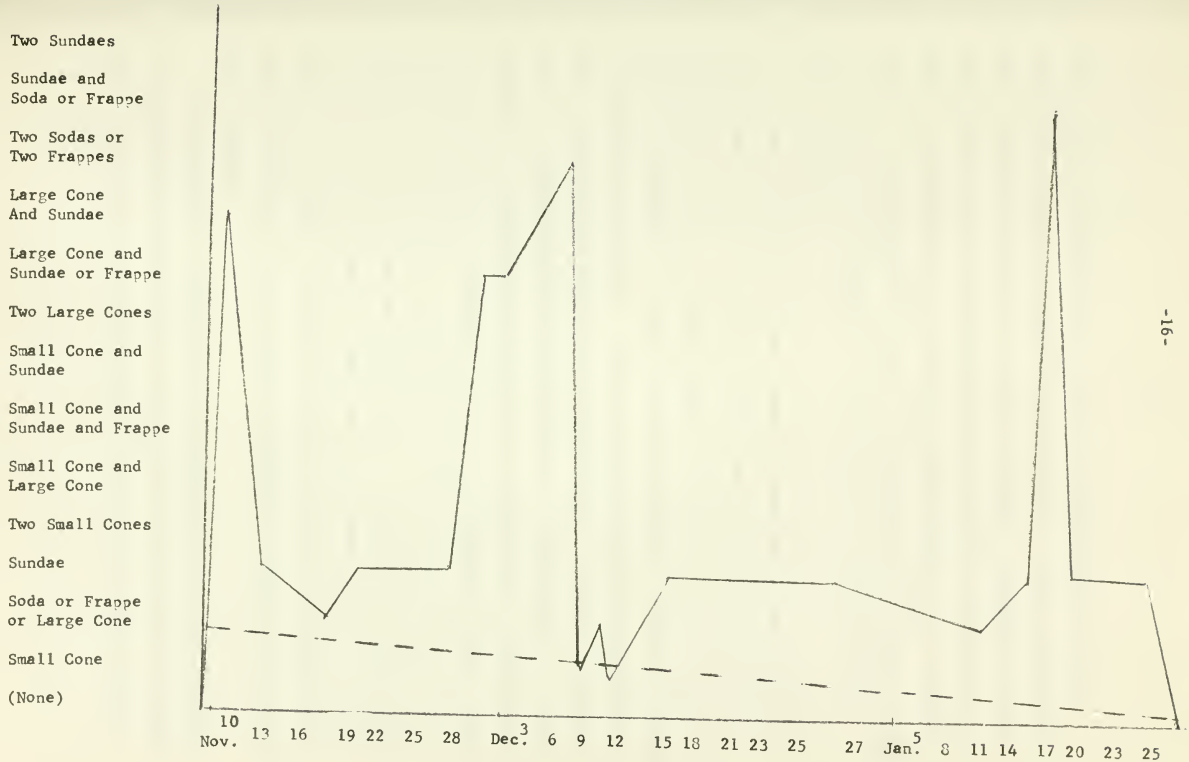
SELF-CHANGE THROUGH SELF-RESEARCH

Another approach to self-directed change was "invented" by Schwitzgebel and one of the boys who participated in the delinquency project, Streetcorner Research (Schwitzgebel 1964). The young fellow approached Schwitzgebel with a problem -- he was overweight and as a result he was ignored by the girls and ridiculed by his peers. To make matters worse he had an irrestible attraction to the ice cream parlor located conveniently on his path home from school. "How can I stop eating ice cream and lose weight?" he asked. Beleaguered by many other requests and demands on his time, Schwitzgebel suggested that the boy try to change himself. He helped the boy set up a graph to record the results of his efforts -- plotting the amount of ice cream eaten each day. To everyone's surprise the boy was quite successful

in his efforts. In the course of three months he controlled his ice cream eating habits and began to lose weight. His graph of the amount of ice cream eaten is shown in Figure 2. The dotted trend line shows the decline in amount of ice cream eaten over the course of the project. When shown the graph, Schwitzgebel asked about the two sundaes eaten on January 17. "That," he said, "was a celebration to show myself that I had beat the habit." The remark was indicative of the self-confidence that the boy seemed to gain from proving to himself that he could control his own behavior, a self-confidence that manifested itself in his relations with his peers. In many ways the boy's general gains in self-confidence and self-control seemed much more important than his specific mastery of the ice cream habit. Successfully controlling one aspect of his behavior seemed to hold forth the promise of continued self mastery and self-direction.

Intrigued by this rather dramatic and unexpected success, Schwitzgebel and Kolb began to encourage others to attempt self-directed change projects. A great number of cases were collected, documenting attempts to change sexual behavior, study habits, anxiety, shyness, smoking and other behavior problems. (An analysis of some of these cases is reported in Schwitzgebel 1960.) In almost all cases subjects reported some degree of success with the self research method and in many cases the projects seemed totally successful. These case studies seemed to justify two principles. The first principle is that under proper conditions, proactive forces emerge in individuals, permitting experimentation with new behavior and striving toward ideals. White (1959), Harlow (1953), Rogers (1951) and others have convincingly documented the case for the existence of proactive motivation in human beings.

Figure 2. Ice Cream Chart



Maslow (1954) has suggested that motives for personal growth and self-actualization emerge when lower-order physiological, safety, relatedness, and ego needs are satisfied to a reasonable degree. It appears, therefore, that conditions can be created whereby many individuals will be able to set goals for themselves and will be able to achieve these goals. Under such conditions, individuals will be able to make increasingly realistic appraisals of their goals and inadequacies, and that they will become motivated to change themselves.

The second principle is that changes in behavior are most likely to be permanent if the process of changing is seen by the individual to be under his own control. The most effective change method is one in which the individual feels that he, and not some external agent of change, is responsible for the change that occurs. It is a commonplace fact that true psychotherapeutic change does not occur until the patient works through his dependence upon the therapist and achieves self-direction. The literature on cognitive dissonance gives experimental evidence for the importance of self-direction in attitude change. These experiments show that attitide change is greatest and most enduring when the person feels that he has freely chosen to alter his point of view (Secord and Backman 1964). Recognizing the importance of self-direction in personality change, self-help societies like Alcoholics Anonymous and Synanon (for narcotics addicts) have made the principles of personal responsibility and voluntary commitment to change a central part of their ideology.

To examine these principles and to understand more about the dynamics of self-directed change a series of experimental investigations were undertaken. In the first study (Zachs 1965) one half of the college students

who responded to a "Do you want to stop smoking?" ad in the newapaper recorded on a graph the number of cigarettes they smoked each day and reported their results each week to the experimenter. These students' results were compared to the other half of the respondents to the ad who were told to try to stop in any way they wanted. At the end of 11 weeks students using the self research graph showed a 53% decrease in number of cigarettes smoked while control subjects showed only a 17% decrease (probability of difference $< .025$). A one year follow-up showed that students using the self research method were still smoking less than control students ($p < .04$). This study suggested that systematic goal-setting and recording of progress facilitated goal achievement.

Further studies of self-directed change projects were conducted with students participating in sensitivity training groups (Kolb, Winter and Berlew 1968; Winter, Griffith and Kolb 1967; Kolb and Boyatzis 1967). As part of his participation in the groups, each student was encouraged to reflect on his own behavior and to select a limited and well defined goal which he would like to achieve. He then kept a continuing and accurate assessment of his behavior in the area related to the change goal. This assessment generally took the form of a graph which measures progress toward the goal day by day. In some cases ratings by peers or objective counts (e.g. "number of times I spoke today") were plotted on the graph and in others the students simply rated his progress on a 1 to 10 scale. At the end of the groups each student wrote a final report that analyzed how successful he was in achieving his goal. In addition the T-Group leaders also rated each student on his success in achieving his goal. By comparing

students who were successful and unsuccessful in achieving their change goal according to these two criteria, three critical aspects of the self-directed change process have been identified: 1) The personality of the individual who undertakes the self-directed change project, 2) The process of goal-setting he goes through and 3) The information feedback he receives about his project.

Personality factors - The ideal self-concept and real self-concept of successful and unsuccessful changers was assessed by analyzing two essays written by the subject describing "How I am now", and "How I would like to be". The ideal self-descriptions of successful changers were characterized by a pattern of thinking which indicated a statement of personal goals coupled with the recognition that these goals were not yet achieved. This pattern was called conditional desire since its most common manifestation was statements in the conditional tense, e.g. "I would like to be a leader." The ideal self-descriptions of unsuccessful subjects, on the other hand, showed little of this pattern of thinking. Instead these essays were characterized either by current self-descriptions ("I am a leader") which involved no projection of an ideal state or by statements of an ideal state which implied no recognition that the state might not be achieved ("I will be a leader.") This pattern was called description of essence.

The real self-concept essays of unsuccessful changers indicated a pattern which was called identity diffusion after Erikson (1959). This pattern was characterized by 1) concern with reality, 2) feelings of playing a role, 3) vagueness about others' perception of oneself, 4) indecisiveness and lack of conviction. This pattern was not present in the real self essays of

successful changers.

These findings were interpreted in terms of congruity theories of attitude change (Brown 1965) which suggest that the motivation for self-directed change comes from the dissonance between ones current self-image and ones ideal self-image. Unsuccessful changers do not think about goals in a way that allows them to experience this dissonance and as a result they do not strive to reduce it. In addition, the identity diffusion of unsuccessful changers produces a lack of clarity about the self at the present time which would tend to reduce felt dissonance.

The process of goal-setting - A number of characteristics of the initial goal-setting process seem important for successful self-directed change.

1) The process of setting a goal

Subjects change more in those areas of their self-concept that are related to change goals they set than they do in those areas which are unrelated to their goal. This difference is not due to the choice of an easy to achieve goal. Thus conscious goal setting facilitates change.

2) Commitment to the change goal

The individual's initial commitment to his change goal is positively related to his eventual success. In addition experimental attempts to increase initial commitment by emphasis on goal-setting increased the percent of successful changers from 44% to 61% on one study.

3) Awareness

Successful changers show a greater initial awareness of factors influencing their change projects than do unsuccessful changers.

4) Expectation of success

Successful changers have higher initial expectations of success than unsuccessful changers.

5) Measurability of the Goal

Successful changers define their goal in such a way that progress can be measured, while unsuccessful changers defined their goals in a way that was general and vague.

6) Self-Controlled Evaluation

Successful changers defined their goals in such a way that they maintained the responsibility for evaluating their own progress. Standards of evaluation were internal rather than external.

7) Psychological Safety

Successful changers indicated feelings of confidence, security, and psychological safety at the time of goal-setting while unsuccessful changers showed lack of confidence, insecurity and a lack of psychological safety during initial goal-setting.

Feedback - In order to be successful in his self-directed change project, the individual must receive information feedback about his progress toward his goal. Zach's study of individuals who were trying to control their smoking suggests that feedback in the form of systematic records of progress (i.e. a daily record of number of cigarettes smoked) faciliates goal achievement. In another study (Kolb, Winter and Berlew 1968) the opportunity to receive feedback in the T-Group related to ones change goal increased successful goal achievement from 5% to 44%. In addition there is a relationship between the total amount of feedback received from fellow

T-Group members and goal-achievement although this relationship is strongest in the last half of the change project. This result was interpreted to mean that the quality as well as the quantity of information feedback is important. Feedback in the last half of a T-Group should be more helpful in that it is perhaps better understood since group members know one another better and have also learned what kind of feedback is helpful to individuals in the group.

While the data in these experiments are not sufficiently quantified to allow tests of the interrelationships among the variables,identified as important characteristics of the self-directed change process, the results suggest some tentative outlines for a cybernetic model of behavior change. Nearly every student of personality and behavior change has recognized that human personality is a dynamic feedback system with self-sustaining and self-reinforcing qualities. Sullivan, for example, sees this aspect of personality (which he calls the self system) to be the major stumbling block to constructive personality change. Hall and Lindsey (1957) describe his concept of the self system this way:

> The self system as the guardian of one's security tends to become isolated from the rest of the personality; it excludes information that is incongruous with its present organization and fails thereby to profit from experience. Since the self guards the person from anxiety, it is held in high esteem and protected from criticism. As the self system grows in complexity and independence it prevents the person from making objective judgments of his own behavior and it glosses over obvious contradictions between what the person really is and what his self system says he is. (p. 139)

Since individuals tend to act in accord with their self system, threats to the self system will cause a person's activities to become more and more inappropriate and rigid leading to further failure and insecurity which in

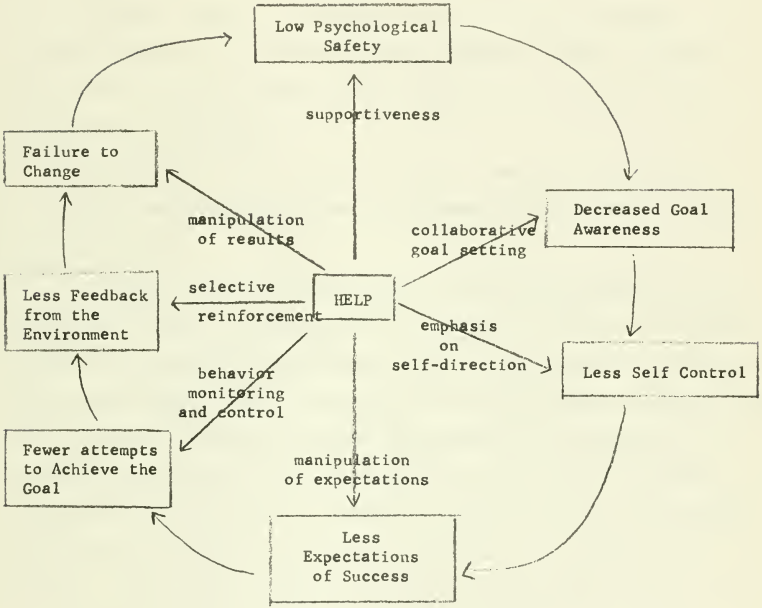
turn leads to further distortions in the self system and so on. The characteristics which have been found to be associated with successful self-directed change give some clues about the nature of the intervening variables in this process. Figure 3 shows how these characteristics fit into a cybernetic model of the change process. Interrelationships among the variables are simplified to illustrate the dominant feedback loop. For purpose of illustration, these characteristics describe an unsuccessful change process beginning with low psychological safety. Low psychological safety can lead to decreased awareness. This decrease in awareness would in turn lead to a decreased sense of self-control which would lead to fewer expectations of success. Low expectations of success would produce few attempts to achieve the goal which would in turn produce fewer opportunities for feedback from the environment. All this would tend to produce failure in achieving the goal. The failure feelings thus aroused would tend to further decrease psychological safety producing an amplification of this positive feedback loop.

Implications for Helping Interventions

This cybernetic model of the behavior change process suggests several intervention strategies that may serve to create more effective helping relationships with individuals who are seeking change. Since feedback loops are composed of elements which need not have a prior or an hierarchial causal order, helping interventions can be directed to the point or points in the feedback loop where they will be most effective in producing change. As Lakin and Wiener put it:

> Within the cybernetic framework, although not unique to it, variables are selected and regulated in the feedback chain which are most

Figure 3
A Simple Cybernetic Model of
Behavior Change and Helping Interventions



> amenable to manipulation and control. In structured therapy, elusive causes are not sought that might operate to produce a disordered system: the therapist goes directly to the element (information) in the feedback loop that has a meaningful coefficient of efficiency in maintaining the loop, and he proceeds immediately to try to insert the change (196 , p. 96).

Thus, cybernetic models of the change process hold forth the promise of an eclectic approach to the choice of helping strategies based on research which identifies those elements in the feedback loop having the highest "coefficient of efficiency".

The simplified model of change in Figure 3 suggests seven types of intervention which may prove effective in breaking into the self defeating cycle of failure.

1. Supportiveness - Rogerian theory has been based primarily on the supportive strategy of increasing the clients' security and self confidence through the therapists' unconditional positive regard, accurate empathy, and genuineness (Rogers 1961). Truax and his associates (Truax and Carkhuff 1964) have shown that these three therapist characteristics are related to constructive personality change in both Rogerian and other forms of therapy. In addition they find that the presence of these variables in the therapist are positively related to intrapersonal exploration on the part of the patient. These results suggest that supportive interventions aimed at increasing psychological safety have a relatively higher coefficient of efficiency in that they produce positive change and gains in another element in the feedback loop -- awareness (intrapersonal exploration).

2. Collaborative goal-setting - Attempts to increase awareness of personal improvement goals through an explicit process of collaborative goal-setting have not often been a part of behavior change programs. However,

the use of this strategy in achievement motivation training programs and in organizational settings (Likert 1967, Kay, French and Myer 1962), as well as in research on self-directed behavior change, suggests that goal-setting procedures may indeed be a highly effective intervention method. The personality pattern of those who are unsuccessful in achieving their self-directed change goals indicates that intervention techniques that help the individual define his current self-image, and help him to clearly recognize and commit himself to his personal improvement goals, should be an effective means of increasing motivation to change.

A careful examination of behavior therapy method of change suggests that in addition to applying, for example, the principles of reciprocal inhabitation (Wople 1958), the therapist is also leading the patient through a process of explicit goal-setting. By asking the patient to define and rank order the fear evoking situations in his life, and then telling him to try to relax while visualizing the weakest fear situation until he masters it, and then proceeding to the next weakest and so on, the therapist is in effect helping the patient to set realistic goals and work to achieve them in a way that is quite similar to the self-directed change method. At this point no research evidence exists which can tell us whether it is the process of reciprocal inhibition or collaborative goal-setting which is the change producing intervention. Similar questions can be raised about other behavior therapy methods.

3. Emphasis on self-direction - While few therapeautic systems place a heavy emphasis on self control of the change process in their methodology it is a common assumption that true psychotherapeutic change does not occur until the patient works through his dependence upon the therapist and achieves

self-direction.

The success of the self-directed change procedures cited in this chapter may well point toward greater future use of self-directed change techniques which greatly reduce the patient's initial dependence on the therapist. The finding that successful self-directed change is facilitated by a goal definition that emphasizes self-evaluation focuses new attention on Rogers' observation about effective helping relationships.

> I have come to feel that the more I can keep a relationship free of judgment and evaluation, the more this will permit the other person to reach the point where he recognizes that the laws of evaluation, the center of responsibility, lies within himself. The meaning and value of his experience is in the last analysis something which is up to him and no amount of external judgment can alter this (Rogers 1961, p.55).

4. Manipulation of expectations - In addition to the findings in self-directed change projects there are a number of psychotherapy studies that have shown the effect of an individual's expectations on his own chances for successful change (Goldstein 1962, Frank 1963). As yet few direct attempts have been made to directly increase individuals' expectations of success. A significant exception is the previously cited work on achievement motivation training. That manipulation of expectations can produce change is shown by a well-executed study by Rosenthal and Jacobson (1968). They found that intellectual gains could be produced in children by nothing more than giving names of children who had been selected at random to their new teachers at the beginning of the school year and describing them to the teachers as children who could be expected to show unusual gains in intelligence during the year. This research suggests that helping interventions that increase expectations of success may be a very effective method of breaking the cycle of failure.

5. Behavior monitoring and control - Behavior therapy attempts to elicit behaviors consistent with constructive personality change goals are of two types -- stimulus control and modeling. In stimulus control methods, environmental conditions which serve as either discriminative or eliciting stimuli for desired behavioral responses are used to increase the probability of a desired response, or decrease a response to be avoided. A simple example would be the case of the student who moves his study area away from his bed in order to keep from falling asleep. Modeling can be defined as "the systematic provision of opportunities for observing the behavior of others, wherein the cues to behavior came from the behavior of others. In short, this is vicarious learning" (Brayfield, 1968, p. 480). A number of studies, most notably by Bandura and Walters (1963), have shown that the observation of a given behavior in a model increases the occurrence of that behavior in the observer.

In self-directed behavior change projects another method has been successfully used to elicit goal-directed behavior -- behavior monitoring. By keeping continuous record of progress toward their goal,subjects are constantly reminded of the goal they are trying to achieve, thus producing more attempts to achieve that goal (Zach 1965, Goldiamond 1965, Schwitzgebel 1964). The fact that successful changers in self-directed change projects give more attention than unsuccessful subjects to how their progress could be measured provides additional evidence for the efficiency of behavior monitoring procedures.

6. Selective reinforcement - Perhaps the best documented strategy for producing change is the manipulation of environmental feedback through the

use of selective reinforcement. The methods of operant shaping and intermittent positive reinforcement have been used to alter such insignificant behaviors as use of pronouns and such major behavioral patterns as delinquent behavior and schizophrenic symptoms. As we have seen, research on self-directed change suggests that the quantity and quality of information feedback may also be related to change.

7. Manipulation of results - A final intervention method which deserves consideration is the manipulation of results of change. While this method has not been used systematically as a therapeutic intervention, it is a common device in experimental research. For example, the literature on level of aspiration is replete with examples of artificial manipulation of performance results, which show measurable changes in future goal-setting and performance (Lewin et. al., Festinger 1942, Frank 1941). While there are obvious problems of credibility for the change agent with such artificial distortions of reality, this method may prove to be a promising intervention strategy.

It can be seen from the above discussion that the elements of the goal-setting process that are crucial for successful goal achievement as well as feedback from the environment and the final change score itself may all be changed by helping interventions. The task for future research is to determine how effective these interventions, taken singly or in combination, can be in changing the cycle of insecurity and failure to one of psychological safety and success. The most effective intervention strategy may well prove to be behavior therapy approaches in combination with the goal-setting procedures of self-directed change.